**Static Electricity Web Inquiry:**

**Part One: Use the PHET Balloon and Static Electricity simulation (widget on the wiki).**

1. Using the simulation bring the balloon close to but not quite touching the wall and the sweater. What do you observe?
2. Bring the balloon to the wall and move it up and down the wall. What do you observe?
3. Bring the balloon to the sweater and move it up and down the sweater. What do you observe?
4. After rubbing the balloon on the sweater, how does the charge on the balloon compare to the charge on the sweater? What happens to the positive charges? What happens to the negative charges? Draw a picture.
5. Move the balloon away from the sweater and release. What happens?
6. Predict what happens when a charged balloon is moved closer to the neutral wall. Draw a picture.
7. Remove the wall, and use two balloons to explore attraction and repulsion. How do the +/- symbols help you decide whether something attracts or repels?
8. Explain how a balloon can be strongly or weakly attracted to the sweater.

**Part Two: Use the PHET John Travoltage simulation (widget on the wiki)**

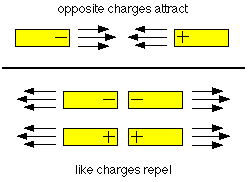
1. Predict what will happen to John if he drags his foot on the carpet. What happens when his finger gets close to the door knob?
2. Observe discharges with John’s arm in several different positions. Explain how arm location and charge accumulation affect discharge.
3. How do charging and discharging compare? How charging can go unnoticed, but discharging is often accompanied by a shock? Explain.
4. Try building up charges while John’s finger is touching the doorknob. Explain your observations.
5. Compare John Travoltage to Balloons and Static Electricity. How does bringing a charged a balloon close to the wall compare to rubbing John’s foot on the carpet and brining his finger close to the door knob? How do these situations differ?

**Part Three: Visit the following website:** [**http://www.sciencemadesimple.com/static.html**](http://www.sciencemadesimple.com/static.html)

**Answer the following questions:**

*1. What is static electricity?*

*2. Complete the figure below using + and – symbols in the blue boxes and words in the white boxes.*



*3. What is Coulumb’s Law? Explain in WORDS how it relates to charge and distance.*

*4. How do we measure charge?*